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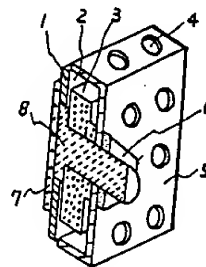
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TRANSLATION ATTACHED
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88-117055/17 G03 OHNO-12.05.80
OHNO GIJUTSU KENKYU *J8 8014-756-B
12.05.80-IP-062670 (01.04.88) A47g-29 C09j-07/02
Adhesive tool to mount article on wall - comprises main body having
thermosetting adhesive agent and heat source in case attached to
main body (J58.12.81)
C88-052743

G(3-B3)

Adhesive tool comprises a main body having a thermosetting
adhesive agent, a heat source case removably attached to the main
body and a heat source put in the case.
Used for hooking or hanging decorative articles etc. on walls of
houses. (J56159288-A) (3pp Dwg.No.0/4)



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⑮ 発明の名称 壁面取付具

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㉒ 特許請求の範囲

1 接着剤を用いる壁面取付具において、加熱硬化型接着剤を設けた取付具本体、取付具本体に着脱自在に設けた加熱源収納容器、加熱源収納容器の内部に収納した加熱源より成ることを特徴とした壁面取付具。

2 前記加熱源が点火型燃料である特許請求の範囲第1項記載の壁面取付具。

3 前記加熱源が反応型無炎燃料である特許請求の範囲第1項記載の壁面取付具。

発明の詳細な説明

本発明は接着剤を用いる壁面取付具に関するものであり、更に詳しくは、熱硬化型接着剤を用いた壁面取付具に関するものである。

従来、接着剤を用いた壁面取付具は取付けが簡単なことから多くの用途に用いられていたが感圧接着剤を用いた壁面取付具は重荷重に耐え難い上にモルタル等の多孔質で凹凸のある被着面には実質的に取付けが不可能なことや水のかかる所では被着体と接着剤の界面に水が侵入して界面破壊を起こすので使用できなかった。

感圧接着剤の上述の欠点を除去する壁面取付具としてゴム系やエポキシ系、シリコン系等の接着剤を用いた壁面取付具であるが、ゴム系は被着面と取付具の両面に接着剤を塗布しなければならず、エポキシ系、シリコン系等の反応型接着剤は2液性の場合に手間がかかり、1液性の場合には硬化に要する温度が高い上に時間がかかって一般用としては不向きであった。

本発明の目的は、従来の壁面取付具における前述の欠点を除去して、簡便且つ安全に使用できる一般家庭向けの接着型壁面取付具を提供することである。

次に、実施例に基づいて本発明を具体的に説明する。

〔実施例 1〕

第1図は本発明の一実施例である壁面取付具の説明図である。

10 該図において突起状のステンレス製取付具8を有する取付具本体1の裏面には1成分加熱硬化型の接着剤7(東芝シリコーン(株)製TSE322)がほぼ平面状に設けられており、本体1に着脱自在に嵌合する加熱源収納容器5の内部には約3gの懐炉灰3が取付具8と係合して設けられている。

15 加熱源収納容器5は例えば石こうの様な耐熱性の断熱部材で形成されており、空気穴4が設けられている。

この壁面取付具をタイル面に接着剤7がタイル面と接触する様に仮着させた後、懐炉灰3に点火したところ懐炉灰3は約10分で燃焼を完了し、20分後に接着剤7は完全に硬化していた。

接着剤の硬化後燃焼灰と一緒に加熱源収納容器を取りはずし取付具8に3kgの重量物を吊下げたところ、取付具8はタイル面に完全に接着しており耐水性も充分であった。

また、この壁面取付具において加熱源収納容器を取りはずして懐炉灰3を燃焼させたところ3gの懐炉灰では接着剤7が充分硬化しなかった。

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〔実施例 2〕

第3図は本発明の他の一実施例の側断面図であり、第4図はその平断面図である。

これ等の図に示す壁面取付具は下端に鈎状突起を有する取付具本体 33 の裏面に加熱硬化型接着剤 35 (四国化成工業㈱製ウルトラダイン 5111) を設け、表面に設けた耐熱性の加熱源収納容器 32 内に反応型無炎燃焼としてガラスウールに分散させた酸化第一鉄粉 40 を収納して形成されており、容器 32 の背面に設けた空気穴 30 は遮蔽シート 31 で塞がれている。

また、接着剤 35 は加熱の際流れ出さない様に紙粘土製のパテ 36 によつて第 4 図に示す様に囲まれており、加熱源収納容器 32 は本体 33 と着脱自在になつてゐる。

この壁面取付具をパテ 36 によつて壁面に仮着し、遮蔽シート 31 を取除くと酸化第一鉄粉が酸化発熱して硬化剤を硬化させる。接着剤は約 1 時間で硬化し、引張せん断試験を行つたところ 5 kg 以上の耐性を示し、更にこの状態で 40℃ の水シャワーの雰囲気 に 10 日間放置しても何等異状が認められなかつた。

本発明の反応型無炎燃料とは、点火型燃料を除く化学反応によって発熱する物質を意味し、酸化第一鉄のほか水酸化ナトリウムと水の溶解反応や中和反応等種々の公知の方法がある。

また、本発明の点火型燃料とはマッチ、ライター等の点火源によつて着火する燃料でその形態は固体、液体あるいは気体がある。

本発明の加熱源としては前記燃料のほか、第2図に示した様な電池による抵抗発熱でもよい。

以上説明した様に本発明の壁面取付具は加熱硬化型の接着剤を使用しているので感圧接着型壁面取付具に比して取付強度が極めて大きい。

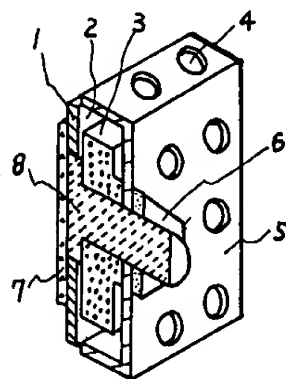
また接着剤硬化用の加熱源が容器中に収納されているので加熱効果が大きく且つ安全である。

更に本発明の壁面取付具は加熱源が収納容器と一緒に取付具本体に着脱自在に設けられているので取扱が簡便であり、取付具の使用時に加熱源容器が邪魔になることもなく、本発明はその目的を
15 ことごとく満足する壁面取付具を提供するものである。

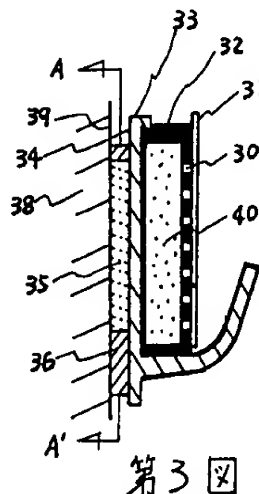
図面の簡単な説明

第 1 図は本発明の一実施例を説明する図であり、第 2 図は本発明の加熱源を説明するための参考図である。第 3 図は本発明の他の一実施例の側断面図であり、第 4 図は第 3 図の平断面図である。

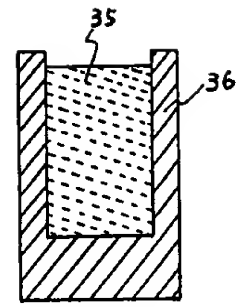
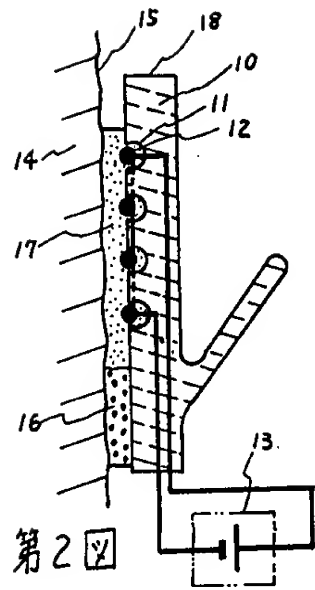
1, 10, 33……本体、8, 18……壁面取
付具、7, 17, 35……接着剤、15, 39……
25 ……被着面。



第 1 圖



第3 ツ



A-A' 断面

第4図

PTO: 2002-1075

Japanese Published Examined Patent Application (B) No. 63-014756, issued April 1, 1988; Publication No. 56-159268, published December 8, 1981; Application Filing No. 55-62670, filed May 12, 1980; Inventor(s): Hisao Morohashi; Assignee: Oono Engineering Research Institute; Japanese Title: Wall Surface Mounting Implements

Wall Surface Mounting Implements

CLAIM(S)

- 1. A wall surface mounting implement using an adhesive, comprising a mounting implement having a thermosetting adhesive, a heating source casing, a heating source accommodated in the heating source casing.**
- 2. A wall surface mounting implement, as cited in Claim 1, wherein said heating source is an ignition type fuel.**
- 3. A wall surface mounting implement, as cited in Claim 1, wherein said heating source is a reactive non-flame fuel.**

DETAILED DESCRIPTION OF THE INVENTION

(The present invention pertains to a wall surface mounting implement using an adhesive, more specifically, the one using a thermosetting adhesive.)

(The prior art wall surface mounting implement using an adhesive is widely used for its easy mounting, but a wall surface mounting implement(using a pressure)

(sensitive adhesive) is not durable for heavy load.) Also, it cannot be mounted on a roughened porous surface, such as a mortar wall and, if it is used where water contacts with it, water will penetrate into the boundary between the adhesive and an object to be mounted, destroying the boundary.

As a wall surface mounting implement free from such a problem, (there is a wall surface mounting implement using a rubber, epoxy, or silicon² adhesive.) With a rubber adhesive, an adhesive needs to be coated on the surfaces of a mounting implement and of an object to be mounted. A reactive adhesive such as an epoxy or silicon² adhesive is tedious in application (in case of two-part adhesive) and takes a high temperature and long time for drying (in case of one-part adhesive,) which is not appropriate for general purpose use.

The objective of the present invention is to present an adhesive wall surface mounting implement free from these problems in the prior art wall surface implement and can be used safely in general household.

The embodiment example of the present invention is explained more specifically below.

(Embodiment Example 1)

Fig. 1 shows the wall surface mounting implement as one embodiment example of the present invention.

As shown in the figure, on the back surface of the mounting implement body 1

having a projected stainless mounting implement 8, (one-part thermosetting adhesive 7 (Toshiba Silicon-TSE322) is applied.) Inside the heat source casing 5 removably engaged into the body 1, nearly a 3 g KAIRO 3 [KAIRO is a small amount of hot ashes that work as a portable heater) is engaged in the mounting implement 8.

The heating source casing 5 is, for example, made of heat-resistant insulating material such as a gypsum, and air holes 4 are made in it.

(This wall surface mounting implement was tentatively brought into contact with the tile surface,) and the ashes 3 were ignited. Then the ashes 3 were burned out in nearly 10 minutes, and the adhesive 7 was completely cured in 20 minutes.)

(After the adhesive was cured, the burned ashes and the heating source casing were removed, and a 3 kg load was hung on the implement 8. The implement 8 was found to have been completely bonded to the tile surface and the water-repellency was excellent.)

When the heating source casing was removed from the wall surface mounting implement and the ashes 3 were burned, the adhesive 7 was not cured by 3 g of ashes.

(Embodiment Example 2)

Fig. 3 shows a side sectional view of another embodiment example of the present invention, and Fig. 4 shows its cross sectional view.

In the wall surface mounting implement shown in the figure, on the back

surface of the implement having a hook at the bottom, the thermosetting adhesive (Ultradine 5111 made by Shikoku Asahi Chemical Engineering, Inc.) 35 was installed, and in the heat-resistant heating source casing 32 installed on the surface, ferrous oxide power 40 dispersed in glass wool was accommodated for reactive non-flame combustion. The air holes 30 made in the back surface of the casing 32 were plugged with shielding sheet 31.

The adhesive 35 was surrounded by clay patty 36, as shown in fig. 4, so that the adhesive agent 35 would not flow out, and the heating source casing 32 was removable from the body 33.

Once the wall surface mounting implement was tentatively attached to the wall surface and the shielding sheet 31 was removed, the ferrous oxide power was oxidized generating heat and cure the curing agent. The adhesive was cured in 1 hour, and demonstrated tensile strength of 5 kg or more when subjected to a tensile test. When this was set aside in a shower at 40°C for 10 days, no change occurred to it.

The reactive no-flame fuel refers to a substance that generates heat by a chemical reaction excluding an ignition type fuel, so the heat can be generated by different methods, such as reaction of sodium hydroxide to water or neutralization reaction.

The ignition type fuel of the present invention means a fuel that can be ignited

by an ignition source such as a match or lighter. It can be solid or liquid.

As for the heating source, other than said fuel, resistance heat by battery may also be used, as shown in Fig. 2.

As mentioned above, the wall surface mounting implement of the present invention uses a thermosetting adhesive therefore can be attached more firmly than a pressure sensitive bonding type wall surface mounting implement.

Since the heating source for curing the adhesive is accommodated in the casing, the heating effect is high and safe.

With the wall surface mounting implement of the present invention, the heating source is removably installed on the mounting implement along with its casing, handling is easy. At a time of mounting, the heating source casing is not in a way, so the present invention can present the wall surface mounting implement that satisfies the purpose.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 illustrate one embodiment example of the present invention. Fig. 2 illustrates the heating source of the present invention. Fig. 3 shows a sectional view of another embodiment example. Fig. 4 shows a cross sectional view of Fig. 3.

1, 10, 33. Body

8, 18. Wall surface mounting implement

7, 17, 35. Adhesive

15, 39. Surface to be mounted

**Translations
U.S. Patent and Trademark Office
1/17/02
Akiko Smith**